



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

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Ref: 8EPR-N

Mr. Joseph G. Alexander, Forest Supervisor
Shoshone National Forest
Forest Plan Comments
c/o Carrie Christman
808 Meadow Lane
Cody, WY 82414-4516

RE: EPA Comments on Draft Environmental Impact
Statement, Shoshone National Forest Draft Land
Management Plan, CEQ #20120255

Dear Mr. Alexander:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4321, *et seq.*, and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609, the U.S. Environmental Protection Agency Region 8 (EPA) has reviewed the July 2012 Draft Environmental Impact Statement (DEIS) for the Shoshone National Forest Draft Land Management Plan (LMP). This DEIS was prepared by the U.S. Department of Agriculture Forest Service (USFS) Shoshone National Forest to analyze potential environmental impacts associated with the proposed action and alternatives to address aspects of the 1986 Shoshone National Forest LMP that have been determined to need adjustment in the following six topic areas: recreation uses and opportunities; special areas and designations; vegetation management; wildlife habitat management; oil and gas development; and commercial livestock grazing.

Background

The planning area encompasses the entire 2.4 million acre Shoshone National Forest and is in Fremont, Hot Springs, Park, Sublette and Teton Counties in northwestern Wyoming. The Forest extends more than 180 miles from the Montana state line to South Pass, Wyoming, near Lander. It is bordered by Yellowstone National Park and the Bridger-Teton National Forest on the west. The Shoshone National Forest is part of the Greater Yellowstone Area -- an area known for its high resource value.

The action alternatives propose varying degrees of adjustment to acreage allocated to management area prescription categories contained in the existing 1986 LMP. The alternatives analyzed in the DEIS are briefly summarized as follows, with more detail included for the Preferred Alternative:

- Alternative A (No Action) – continuation of present management under the existing 1986 management plan with no change to management area allocations;
- Alternative B (Preferred Alternative) – adjusts management direction from 1986 plan to provide changes to management acreage allocations that include less acreage for over-snow motorized recreation but more for total miles of motorized trails; more acreage for new special area designations and eligible wild and scenic river segments; more acreage for vegetation management activities including timber production; less acreage for high potential oil and gas occurrence available with surface occupancy; and no change for commercial livestock grazing;
- Alternatives C through F – provide a range of scenarios from a focus on wilderness protection to the highest level of commodity production and motorized use.

The EPA's Comments and Recommendations

We appreciate that the USFS has the unique challenge to develop alternatives to address multiple use issues in an area with high resource value. To ensure that potential impacts to public health and the environment are analyzed and disclosed, our comments and recommendations for the July 2012 DEIS are targeted to the following key topics: (1) aquatic resources; (2) air quality; and (3) adaptive management and monitoring. Concerns associated with these topics are the basis for the EPA's EC-2 rating discussed at the conclusion of this letter.

(1) Aquatic Resources

The EPA considers protection of aquatic resources to be among the most important issues to be addressed in any NEPA analysis for forest management planning. As a result of the proposed management area category allocations, future actions such as vegetation and habitat management, prescribed fire, motorized use, road construction, oil and gas development, and grazing have the potential to adversely impact aquatic resources, including surface water, groundwater, wetlands, streams, large rivers, riparian areas, and their supporting hydrology. Given the EPA's concerns regarding aquatic resources, we are providing recommendations related to specific water resources and/or management actions, as discussed below.

Existing Surface Water Characteristics: The DEIS notes that all or part of 147 watersheds are located on the Shoshone, with 89% considered functioning properly and 3% considered functioning at risk, as determined through the Watershed Condition Framework, most likely due to historical grazing and roads. The DEIS also notes that the Forest contains four municipal watersheds, about 4,150 miles of perennial streams (including the headwaters of numerous principle rivers in the area), and approximately 68,500 acres of riparian areas (including wetlands) with 89% considered in proper functioning condition. We recommend that the Final EIS (FEIS) describe how the public may access relevant data utilized in this analysis from the Watershed Condition Framework model, and that Appendix E, Maps, include an overview map of the watersheds (including municipal watersheds), rivers and riparian areas/wetlands of the Shoshone.

The DEIS identifies a Clean Water Act (CWA) Section 303(d) impaired stream segment, the Clarks Fork of the Yellowstone, from the Montana border downstream to the confluence with Crazy Creek, located within the Forest boundary. The aquatic life other than fish use is impaired due to exceedances of the aquatic life other than fish chronic copper, silver and cadmium water quality criteria. The primary source of this impairment is past mining activities in Montana. We recommend elaborating on how proposed management area allocations provide for future activities that might affect water quality in this specific water body segment, and in downstream segments, and how and whether project design criteria could mitigate impacts to be consistent with the Montana Total Maximum Daily Load requirements that address this impairment in Wyoming. We also recommend identifying any impaired stream segments that may be located downstream from the Forest (e.g., Popo Agie and Greybull) and assessing whether activities on the Forest could exacerbate or improve conditions on downstream impaired segments.

The Wyoming Department of Environmental Quality (WDEQ) has not assessed all the water bodies within the Forest boundaries. For example, within the Clarks Fork sub-basin, only Dead Indian Creek, Squaw Creek, and the upper segment of the Clarks Fork of the Yellowstone River have been assessed. In the 2012 Wyoming Water Quality and Impaired Waters List, water bodies that have not been addressed are not categorized. The water quality condition of many miles of rivers and streams within the watershed is unknown. We recommend the FEIS indicate that the water quality condition is not known for many water bodies within the Forest and analyze how alternatives might affect water quality in CWA Section 303(d) listed segments and other water bodies regardless of impairment or assessment status.

To provide a baseline for future monitoring of impacts and evaluating of potential influence on downstream water quality, we recommend the FEIS provide a summary of any available water quality monitoring data. Identification of significant gaps in monitoring data could be targeted for collection through future project monitoring plans for Forest lands.

Existing Groundwater Characteristics: Including site-specific groundwater information in the FEIS would enhance the USFS's ability to determine where future leasing stipulations and/or mitigation and monitoring measures may be needed to protect current and future drinking water resources. As this information is likely to be revised within the 15-20 year timeframe of the LMP, the EPA further recommends the USFS include a commitment in the FEIS to periodically confirm that the most current groundwater information is being collected and considered in the planning area. We suggest this information be evaluated annually, as feasible, where projects are being considered that could affect groundwater resources.

Specifically, we recommend the FEIS include a map of all groundwater resources of the Shoshone and expanded discussion to include the following information, if available:

- Identification of major aquifers (including any Sole Source Aquifers) of the Forest, their three dimensional extent, the physical and chemical characteristics of their groundwater, estimates of the quantity of water in the aquifers and aquifer recharge rates;
- Location and extent of groundwater recharge areas;
- Characterization of source water protection zones designated by the State of Wyoming;
- Location of shallow and sensitive aquifers that are susceptible to contamination from surface activities; and

- Location of existing and potential (i.e., those that can reasonably be used in the future) underground sources of drinking water (USDW).¹

To assist you in this effort, the EPA recommends that the USFS incorporate the 2011 data from the Wyoming Water Development Commission's and Wyoming State Geological Survey's updated and expanded 2003 Available Groundwater Determination Technical Memorandum (Lidstone and Associates, Inc., 2003). The EPA also recommends the *Wyoming Groundwater Vulnerability Assessment Handbook* (SDVC Report 98-01, 1998) as a resource for developing maps of aquifer sensitivity and identifying shallow groundwater aquifers susceptible to contamination. Information regarding source water protection zones designated by the State of Wyoming is available on the State's Department of Environmental Quality website at <http://deq.state.wy.us/wqd/www/SWP%20WHP/Documents/02560-doc.pdf>.

Water Quality Impacts of Beetle Epidemic: The DEIS identifies four inventoried municipal watersheds located on the Shoshone – the North Fork Shoshone River and South Fork Shoshone River serving the municipality of Cody and numerous rural communities; the Wood River serving the community of Meeteetse; and the Middle Popo Agie River serving the community of Lander. The presence and handling of beetle-killed trees has the potential to impact public water supplies if it leads to organic loading of area waterbodies that are sources of drinking water. Organic matter interacts with disinfectants used in the drinking water treatment process to form disinfection byproducts, which are a human health concern. Organic loading may also decrease oxygen levels leading to the release of metals such as arsenic, manganese, and iron from sediments. Given that the Preferred Alternative increases the management area acreage allotted to vegetation management, in part to address concerns related to the beetle epidemic, we recommend the FEIS provide an assessment of the potential for organic loading impacts to drinking water supplies associated with these municipal watersheds.

Range-Related Impacts to Aquatic Resources: The DEIS notes that there are currently 88 commercial livestock grazing allotments on the Shoshone and that many changes have been made over the last 10-15 years in grazing management and practices to protect soil and water resources. Given that the Preferred Alternative maintains the number of acres deemed suitable for grazing at 375,400 and the number of animal unit months at 55,900, the same as the 1986 plan, we recommend elaborating on the referenced changes to management practices and new strategies associated with livestock grazing. Further, since range improvements (e.g., water developments, spring enclosures, fencing, corrals) are generally designed and constructed in a manner that protects aquatic resources from adverse impacts associated with livestock grazing, we recommend expanding the discussion to address how range improvements will be protected from impacts associated with vegetation management, prescribed fire, recreation use and road construction. For additional recommendations related to livestock grazing, please see comment (3) below.

¹ In general, this includes aquifers with a concentration of total dissolved solids (TDS) less than 10,000 mg/l and with a quantity of water sufficient to supply a public water system. Aquifers are presumed to be USDWs unless they have been specifically exempted or if they have been shown to fall outside the definition of USDW (e.g., over 10,000 mg/l TDS).

Impact of Roads on Aquatic Resources: The Preferred Alternative would maintain the existing miles of open roads and would increase the total miles of motorized trails. We recommend that Appendix E, Maps, identify the existing road network and that the FEIS include a summary discussion of foreseeable road construction and reconstruction, by alternative, based on revised management area allocations. While the DEIS describes potential impacts from roads and trails management, it notes that there would be little or no negative effects to soil and water resources if design criteria and Best Management Practices (BMPs) are followed. For disclosure purposes, we recommend these design criteria and BMPs be summarized in the FEIS.

For your consideration, we provide the EPA's general recommendations to protect aquatic resources from road impacts, as follows:

- Locate roads away from streams and riparian areas;
- Locate roads away from steep slopes, landslide prone areas, and erosive soils;
- Minimize the number of road stream crossings;
- Construct unavoidable road stream crossings during periods of low flow to avoid fish spawning and incubation periods, and/or dewater relevant stream segments prior to construction;
- Provide adequate road drainage and erosion control to avoid routing sediment to streams;
- Use bottomless or textured bottom culverts if possible;
- Design roads to allow for natural drainage patterns; and
- Consider road decommissioning or rehabilitation at an equal or greater rate than new road construction to prevent increases in overall watershed impacts.

Design Criteria, Mitigation and Monitoring: The DEIS identifies potential impacts to water resources from vegetation and habitat management, timber harvest, prescribed fire, livestock grazing, recreation (including roads and motorized use trails), and mineral and energy development. In each instance, reference is made to little or no negative effects to soil and water resources if design criteria from the watershed conservation practices are followed for any of the alternatives; however, there is no description of these design criteria and BMPs. Since the USFS released earlier this year its *National Best Management Practices for Water Quality Management on National Forest System Lands Volume 1: National Core BMP Technical Guide*, which identifies practices to be used on forest lands and recommends the development of site-specific BMP prescriptions, we recommend the FEIS include a summary discussion of design criteria and BMPs, particularly for the Preferred Alternative. The EPA supports the development of design criteria, mitigation and monitoring measures to reduce the potential for aquatic resource impacts. Additionally, to assure that general design criteria and mitigation measures provide the expected, adequate protection to streams, wetlands and riparian corridors under site-specific project conditions, the EPA recommends including a commitment to an audit program for periodic inspection, maintenance and any needed adjustment of protection measures.

Possible measures to consider include the following:

- Use existing landing locations and roads when reasonable;
- Minimize landing size and design for proper drainage;
- Require revegetation of all disturbed areas with native seed mix within the same growing season of disturbance, and monitor revegetation efforts for five years to ensure success;
- Specify buffer requirements to protect wetlands, riparian areas and floodplains;
- Require special protections for high quality wetland resources such as springs and fens;

- Specify steps to protect range improvements from impacts;
- Monitor impacts from treatments proposed adjacent to high value water resources;
- Monitor the breakdown of hydrophobic soils following prescribed burns; and
- Develop a monitoring plan and schedule to assess the effectiveness of road closures.

(2) Air Quality Impacts

Under the proposed management area category allocations, future actions such as timber harvest, prescribed fire, motorized use, road construction, and oil and gas development have the potential to adversely impact air resources. It is particularly important to provide management direction to mitigate project-related air quality impacts given the Shoshone's proximity to population areas and inclusion of mandatory Class I Federal areas (Washakie Wilderness Area, Fitzpatrick Wilderness Area, and North Absaroka Wilderness Area) and sensitive Class II areas (Absaroka-Beartooth Wilderness Area and Popo Agie Wilderness Area).

We appreciate that the DEIS includes a summary of available data for existing conditions in the counties near the Shoshone, as well as a presentation of visibility trends for the Class I areas on the Shoshone. Information regarding current conditions will be an important tool for monitoring the impacts of future projects that may be implemented under the proposed management area category allocations. Decision-makers will need to understand baseline conditions in an effort to ensure that USFS activities do not adversely impact the National Ambient Air Quality Standards (NAAQS) or Air Quality Related Values.

Design Criteria and BMPs Related to Dust: The DEIS notes that dust generated from recreational use of the transportation system would likely not be mitigated, except on roads with the greatest traffic and/or safety issues. In addition, the DEIS notes that road use associated with mineral development, oil and gas development, timber harvesting, and fire and fuels management may require dust abatement measures to reduce air quality impacts. We recommend that the FEIS include a commitment to require these dust management measures for future projects where such application is deemed necessary to reduce impacts.

Prescribed Fire: We appreciate the clear explanation of potential prescribed fire air quality impacts and the detailed steps to minimize such impacts. We fully support the prescribed fire management process outlined in the DEIS, which appears to closely mirror the process described in the Interagency Prescribed Fire Planning and Implementation Procedures Guide (July 2008). We suggest including a reference to this Interagency Guide to provide additional information to the public.

Oil and Gas Development: While allocation of management acreage available for oil and gas development is one of the key issues addressed by this draft LMP, no estimate of the reasonably foreseeable development (RFD) is included in the DEIS. It appears that USFS intends to defer development of the RFD to a future revision of the oil and gas leasing analysis for the Forest and/or future project-specific analyses. Until an RFD is estimated, it is difficult to definitively identify the appropriate level of air quality analysis. At the outset of the NEPA process for future oil and gas development projects and/or oil and gas leasing, the EPA would like to resume discussions with USFS regarding the air quality impact analyses and appropriate mitigation measures, consistent with the process described in the June 23, 2011 National Memorandum of Understanding regarding air quality analyses and mitigation for federal oil and gas decisions through NEPA.

Ozone Nonattainment Area and General Conformity Requirements: A portion of the Upper Green River Basin (UGRB) Marginal Ozone Nonattainment Area is within the southern portion of the Shoshone National Forest. Section 176(c)(4) of the Clean Air Act (CAA) established the General Conformity provisions which play an important role in helping States and Tribes improve air quality in those areas that do not meet the NAAQS. In response to section 176(c)(4) of the CAA, the EPA promulgated General Conformity requirements ("Subpart B—Determining Conformity of General Federal Actions to State or Federal Implementation Plans") in 40 CFR 93.150 through 93.165. Under the General Conformity requirements, Federal agencies must work with State, Tribal and local governments in a nonattainment or maintenance area to ensure that federal actions conform to the air quality plans established in the applicable State or Tribal implementation plan. While not a part of the NEPA requirements that must be addressed in the LMP FEIS, please be advised that before finalizing approval of actions conducted under the LMP, the CAA requires that the USFS conduct a general conformity analysis for any project emissions occurring in an area designated as nonattainment or maintenance for the NAAQS.

We recommend that the FEIS include a discussion regarding the USFS's plans to address the CAA and 40 CFR 93 "Subpart B" General Conformity requirements for emissions from USFS-authorized activities in the UGRB Ozone Nonattainment Area. As noted in 40 CFR 93 Subpart B, a determination must be made that emissions from a Federal action will or will not exceed an applicable *de minimis* threshold level for the criteria pollutant of concern or its precursors; this would be 100 tons per year for NO_x or VOCs in the UGRB Ozone Nonattainment Area (see 40 CFR 93.153). If emissions from USFS-authorized activities in the UGRB Nonattainment Area will exceed the 100 tons per year ozone precursor emissions *de minimis* threshold level for NO_x or VOCs, then a full general conformity determination is required to document how the federal action will affect implementation of the applicable plan for the area to reach attainment. A Federal agency may use a combination of the criteria listed in section 40 CFR 93.158 to get a project to conform. See General Conformity Guidance, page 19 (July 13, 1994). The EPA has assisted other agencies in exploring options to reach conformity and is available to discuss conformity options with you if that would be useful.

We also recommend that the FEIS note that if future activities in the nonattainment area trigger the need for a general conformity analysis, then the general conformity analysis for such future activities would be included in the USFS's project-specific NEPA analysis.

(3) Options for adaptive management and requirements for monitoring should be fully disclosed.

Given that this LMP provides management area allocation for future livestock grazing, we recommend the FEIS identify the features of an effective adaptive management plan that may be expected for future grazing allotment analyses, including the following:

- Decision tree with achievable and measurable objectives to provide accountability and guide future decisions;
- Specific decision thresholds with identified indicators for each impacted resource;
- Targets that specify a desired future condition;
- Firm commitment to implement and fund a monitoring plan with protocols to assess whether thresholds are being met;
- Firm commitment to use monitoring results to modify management strategies as necessary; and
- Designated timeframes for completion of necessary management modifications.

For future allotment analyses, we recommend the FEIS include a summary discussion of specific BMPs and adaptive management strategies to protect sensitive soils, wetlands, riparian areas, meadows, stream crossings, and critical habitat from grazing impacts. We support broad consideration of adaptive management techniques, such as exclusions and upland water developments, whenever feasible to protect streams, wetlands, riparian corridors, and fishery spawning areas. We also recommend protection of stream corridors through use of a minimum 100 foot buffer, particularly where grazing may contribute to pathogen, sediment, and/or temperature concerns. Limiting grazing intensity, frequency or season of use may be necessary where resource management objectives are not being met. Other tools worth considering are modifying allotment boundaries and controlling the timing of grazing to prevent damage to streambanks and riparian areas when they are most vulnerable to trampling damage.

Given the Shoshone's unique location in the Greater Yellowstone Area with its special status species, such as the Endangered Species Act (ESA)-listed threatened Grizzly Bear and the ESA experimental population of Northern Rocky Mountain Gray Wolf, the U.S. Fish and Wildlife Service (USFWS) may have recommendations for adaptive management strategies that could be implemented if monitoring indicates excessive livestock conflicts. As noted below under "Other Issues," such information would be a valuable addition to the FEIS.

We recommend that the FEIS include an expanded discussion of monitoring requirements, including the parameters to be monitored and the monitoring frequency, for water quality, wildlife impacts, and soil quality parameters. Timely monitoring is particularly important given the high aquatic and wildlife resource values in the project area. Water quality monitoring is of particular concern since most of the stream segments within the Forest are considered unassessed by WDEQ. The ability to evaluate the extent of impacts from Forest activities depends on both baseline and routine water quality monitoring in stream segments that would be affected. We recommend coordination with WDEQ to develop water quality monitoring programs and protocols.

The EPA recommends discussion of the general timing of adaptive management implementation and effectiveness monitoring. A firm commitment to effectiveness monitoring is desirable given that adaptive management cannot be employed without full implementation of associated monitoring.

Other Issues

The oil and gas leasing stipulations contained in the 1995 Record of Decision (ROD) may be inconsistent with the revised LMP and may require revision to ensure protection of resources.

Based upon conversations with USFS staff and information provided in the DEIS, we understand that a revision to the 1995 Shoshone ROD for oil and gas leasing may be necessary depending on the alternative selected for the current proposed LMP revision. Given that the ROD was issued in 1995, we encourage USFS to pursue this revision, and we will welcome the opportunity to discuss recommendations for leasing stipulations, mitigation measures and monitoring requirements to ensure protection of air and water resources from impacts associated with oil and gas development.

The EPA's Rating

Consistent with Section 309 of the CAA, it is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. Based on the procedures the EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action, the EPA is rating this DEIS as Environmental Concerns – Insufficient Information (EC-2). The "EC" rating indicates that the EPA review has identified environmental impacts that need to be avoided in order to fully protect the environment. The "2" rating indicates that the EPA has identified additional information, data, analyses, or discussion that should be included in the Final Environmental Impact Statement. A full description of the EPA's rating system is enclosed.

We hope that our comments regarding aquatic resources, air quality, and adaptive management and monitoring will assist you in further reducing the environmental impacts of this project. We appreciate the opportunity to review and comment on this DEIS. If we may provide further explanation of our comments, please contact me at 303-312-6925, or your staff may contact Amy Platt at 303-312-6449.

Sincerely,

A handwritten signature in black ink, appearing to read 'Suzanne J. Bohan', with a long horizontal flourish extending to the right.

Suzanne J. Bohan
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosure

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO -- Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC -- Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO -- Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU -- Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 -- Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 -- Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new, reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 -- Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

